REMARKS

This paper is being provided in response to the Office Action mailed April 27, 2005, for the above-referenced application. In this response, Applicant has cancelled withdrawn claims 14-16 without prejudice or disclaimer of the subject matter thereof and added new dependent claim 17 to clarify that which Applicant considers to be the invention. Further, as discussed below, Applicant submits herewith a verified translation of Japanese Priority Application No. 2003-024717 to which the present application claims priority. Applicant respectfully submits that the new claim is fully supported by the originally-filed specification.

The rejection of claims 1 and 4-8 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,617,717 to Sachan et al. (hereinafter "Sachan") is hereby traversed and reconsideration is respectfully requested.

Independent claim 1 recites a chemical mechanical polishing method for polishing a low-k material insulating layer formed on a semiconductor wafer. An aqueous abrasive slurry is prepared composed of a water component, an abrasive component, a first additive for making the first low-k material insulating layer of the semiconductor wafer hydrophilic in nature, and a second additive for adding acidity to the aqueous abrasive slurry. The aqueous abrasive slurry is fed to a rotating polishing pad. The low-k material insulating layer is applied and pressed onto the rotating polishing pad. Claims 2-13 and 17 depend directly or indirectly from independent claim 1.

The Sachan reference discloses a composition and method for polishing in a metal chemical mechanical polishing (CMP) procedure. An abrasive slurry formulation is used in the polishing process that includes chemical additives to suppress the organic polymer removal rate. Further, a complexing agent and/or a dispersant may be added to the slurry formulation. (See Abstract and col. 3, lines 37-56 of Sachan.)

Applicant's independent claim 1 recites at least the features of a chemical mechanical polishing method that includes a polishing step of a low-k material insulating layer. Applicant has found that the presently claimed invention provides for an improved process for producing semiconductor devices. Applicant respectfully submits that Sachan does not teach or fairly suggest at least the above-noted features as claimed by Applicant. Specifically, Sachan does not disclose the CMP polishing of a low-k material insulating layer, rather Sachan is directed to a method for selectively polishing a metal wiring pattern and a silicon dioxide (SiO_2) layer after removal of metal, as disclosed in col. 1, lines 53-65 and col. 2, lines 56-59. Also, in examples I and II of Sachan, although it is stated that metal (copper, tantalum) and silicon dioxide (SiO_2) (formed from TEOS) wafers were polished, no polishing of a low-k material insulating layer is referenced. Accordingly, in view of the above, Applicant respectfully requests that this rejection be reconsidered and withdrawn.

The rejection of claims 2-3 and 9-13 under 35 U.S.C. 103(a) as being unpatentable over Sachan in view of U.S. Patent Application Publication No. US 2004/0162011 to Konno et al. (hereinafter "Konno") is hereby traversed and reconsideration is respectfully requested in view of the submission of a verified translation of the Japanese Priority Application, discussed below.

Submitted herewith is a verified translation of Japanese Patent Application No. 2003-024717 (the Japanese Priority Application), to which the present application claims priority. The Japanese Priority Application was filed on January 31, 2003, and supports the claims of the present U.S. application. See, for example, page 8, line 12 to page 12, line 31 of the verified translation. Accordingly, Applicant respectfully submits that the verified translation of the Japanese Priority Application entitles the above-referenced application to the priority date of January 31, 2003.

Applicant respectfully submits that the date of the Japanese Priority Application, January 31, 2003, is prior to the earliest effective U.S. filing date of the Konno reference, July 25, 2003. Accordingly, Applicant respectfully requests that Konno be withdrawn and that this rejection of Applicant's claims in view of Konno also be withdrawn.

Further, Applicant has added new claim 17 and respectfully submits that this claim is patentable over the prior art of record.

Based on the above, Applicant respectfully requests that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 617-248-4038.

Respectfully submitted,
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